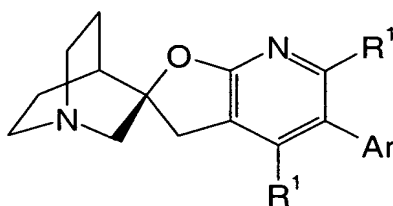


Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

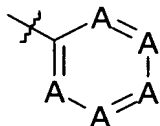
Claim 1 (original) A compound in accord with formula I:



I

wherein:

Ar is a moiety formula II:



II

wherein:

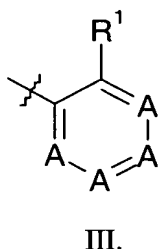
A is independently at each occurrence CR¹ or N provided at least one A is R¹;

R¹ is independently at each occurrence H, C₁-C₆alkyl, or halogen, provided that at least one occurrence of R¹ comprises tritium or a halogen radioisotope.

Claim 2 (currently amended) A compound according to Claim_1, wherein no more than one occurrence of A is N.

Claim 3 (original) A compound according to Claim 1, wherein no more than two occurrences of R¹ are other than hydrogen.

Claim 4 (currently amended) A compound according to Claim 1, wherein Ar is a moiety of formula III[.]



Claim 5 (original) A compound according to Claim 1, wherein R¹ is hydrogen or fluorine, and A is N at no more than one occurrence.

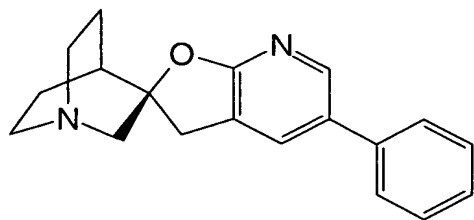
Claim 6 (original) A compound according to Claim 1, wherein Ar is selected from phenyl, 2-[¹⁸F]fluorophenyl or 2-[¹⁸F]fluoro-3-pyridyl.

Claim 7 (currently amended) A compound according to Claim 1, comprising tritium.

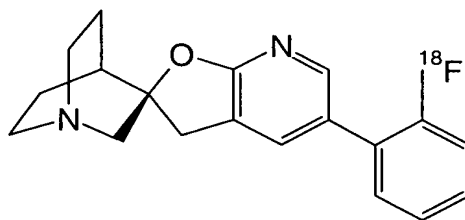
Claim 8 (original) A compound according to Claim 1, comprising a radioisotope selected from ¹⁸F, ¹²³I, ¹²⁵I, ¹³¹I, ⁷⁵Br, ⁷⁶Br, ⁷⁷Br or ⁸²Br.

Claim 9 (original) A compound according to Claim 8, comprising ¹⁸F.

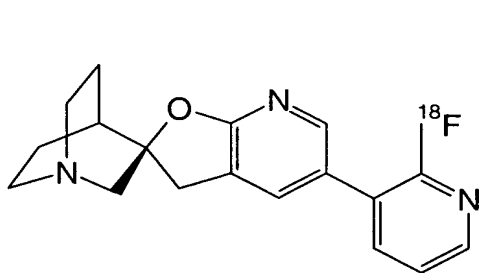
Claim 10 (original) A compound according to Claim 1 selected from compounds of formulae IV, V, VI, VII, VIII and IX:



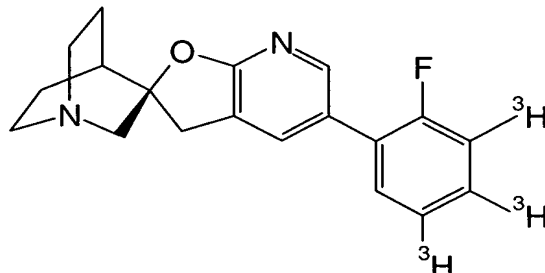
(IV)



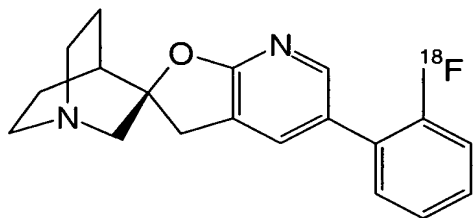
(V)



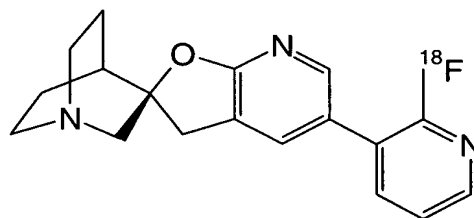
(VI)



(VII)



(VIII)



(IX)

Claim 11 (original) A diagnostic composition comprising a compound of the invention, and a pharmaceutically-acceptable diluent or carrier.

Claim 12 (original) A method for diagnosis of diseases or conditions in which detection of the $\alpha 7$ nicotinic receptor beneficial comprising:

- administering to a subject a detectable amount of a compound of the invention;
- detecting the presence and distribution of said compound in said subject;
- analyzing the distribution of said compound in said subject;
- using said distribution to assess the disease or condition of said subject.

Claim 13 (original) The method of Claim 12 for the diagnosis of psychotic disorders or intellectual impairment disorders.

Claim 14 (original) The method of Claim 12, for the diagnosis of Alzheimer's disease, learning deficit, cognition deficit, attention deficit, memory loss, Attention Deficit Hyperactivity Disorder, anxiety, schizophrenia, mania, manic depression, Parkinson's disease, Huntington's disease, Tourette's syndrome, neurodegenerative disorders in which there is loss of cholinergic synapse, pain, and for ulcerative colitis.

Claim 15 (original) A kit comprising:
an administrable and detectable quantity of a compound according to Claim 1, and
instructions for administering and thereafter detecting the distribution of said
compound in a subject.